XLI. *Observations of Immersions and Emersions of* Jupiter's *first Satellite, made at* Funchal, *in* Madeira, *with a reflecting Telescope of* 18 *Inches Focus, made by Mr.* Short. *The Time was found by taking equal Altitudes, with a Quadrant of* 12 *Inches radius, made by Mr.* Bird, *and with the help of a good Pendulum Clock made in London. By the late* Thomas Heberden, *M. D. F. R. S.*

Read Dec. 13, 1770.

THE latitude of the place of observation in Funchal, by a mean of several observations made with the same quadrant $= 32^{\circ}\ 33'\ 35''$.

Observations of Jupiter's first Satellite, made at Madeira.

	Magnif. power	Apparent time	Obser. made at Greenwich with a reflector of six feet focus, power 100	Calculated in the Connoissance des temps.	Diff. of Mer. between Madeira and Greenwich
		Emersions.			
1763		h ′ ″		h ′ ″	h ′ ″
Dec. 26	95	7 16 4		8 31 47	1 6 27
1764					
Jan. 11	95	5 27 35 hazy		6 42 55	1 6 4
25	95	9 12 42		10 28 24	1 6 26
Feb. 10	55	7 29 47		8 45 34	1 6 31
17	55	9 25 12 flying clouds		10 41 3	1 6 35
Mar. 27	55	8 9 3 clouds		9 24 48	1 6 29
		Immersions.			
1765					
Dec. 24			10 39 27		
1766					
Jan. 16	55	9 31 20		10 47 48	1 7 12
Feb. 1	55	7 44 38		9 0 43	1 6 49
		Emersions.			
Mar. 5	55	6 37 36 doubtful	7 45 5	7 53 28	1 6 36
				Calculated in the Naut. Alm.	
1767					
Apr. 16	55	8 9 48	9 16 13	9 16 55	1 / 7
May 9	55	8 25 35 flying clouds	9 32 26	9 33 12	1 7 37

Observations

Obſervations of Jupiter's firſt Satellite, made at Madeira.

	Magnif. power	Apparent time	Obſer. made at Greenwich with a reflector of ſix feet focus power 100	Calculated in the nautical almanac	Diff. of Mer. between Madeira and Greenwich
		Immerſions.			
1768		h ′ ″		h ′ ″	h ′ ″
Mar. 26	55	8 26 51		9 34 19	1 7 28
Apr. 2			11 29 23		
		Emerſions.			
Apr. 18			12 1 37		
25			13 57 19		
27	55	7 19 24		8 26 42	1 7 18
May 4	55	9 15 0 doubtful		10 22 13	1 7 13
11			12 16 46		
18			14 13 17		
20	55	7 33 27		8 40 42	1 7 15
27	55	9 27 33		10 34 57	1 7 24
June 3			12 28 6		
July 5	55	7 52 10 flying clouds		8 59 24	1 7 14
			Diff. of the two mer. by the obſ. of 16 April, 1767		
			1 6 25		
Add for diff. of teleſcopes - - - -			25		
diff. of meridians - - - -			1 6 50		1 6 55 $\frac{10}{17}$ mean.

N. B. 25″ are to be allowed for the difference between the reflector uſed at Greenwich and that uſed at Madeira.

9′ 16″ are allowed for the difference of meridians between Paris and Greenwich.